

Patent  
2896-6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Examiner: N/A
	)	
John Arthur Cooper et al.	)	Group Art Unit: 1724
	)	
Serial No. 10/690,785	)	
	)	
Filed: October 21, 2003	)	
	)	
Title: Apparatus and Methods for	)	
Removing Mercury from Fluid	)	
Streams	)	
	)	

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Post Office Box 1450  
Alexandria, Virginia 22313-1450

Sir:

Applicants hereby disclose to the Patent Office patents, publications, and other information of which they are aware. An Information Disclosure Statement by Applicant listing the items for consideration by the examiner is attached hereto. One copy of each patent and publication cited is being submitted with this Statement.

The items cited on the attached Information Disclosure Statement by Applicant may or may not be material to the patentability of the claims in the above-identified application, and their submission is not to be construed as an admission that the items are material or considered to be material (37 C.F.R. § 1.97(h)), or even that they qualify as "prior art" under

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify, pursuant to 37 C.F.R. § 1.8 that this paper or fee (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service with sufficient postage as first class mail on the date shown below in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Dated: January 22, 2003

By:

Cheryl J. Blackman

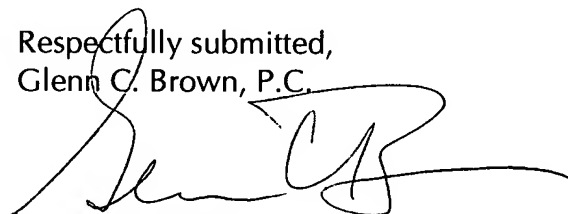
35 U.S.C. § 102 with respect to the claimed invention unless specifically designated as such. Identification of any publication or patent having an issue date or a publication date after the statutory bar date is not an admission that the publication was published, or that the patent was filed, before the invention claimed in this application was made by Applicants.

The filing of this Information Disclosure Statement is not to be construed to mean that a search has been made or that additional information material to the examination of this application does not exist.

No Fee

Because this statement is being submitted prior to the first action on the merits, no fee is required under 37 C.F.R. § 1.97(b). However, should the Patent Office determine that a fee is required, the Assistant Commissioner is hereby authorized to charge any additional fees to Deposit Account No. 5022-32.

Respectfully submitted,  
Glenn C. Brown, P.C.




Glenn C. Brown  
Registration No. 34,555

Dated: April 22, 2004

GCB/cjb  
Enclosures

Glenn C. Brown, P.C.  
777 N.W. Wall Street, Suite 308  
Bend, Oregon 97701  
541/312-2500

Please type a plus sign (+) inside this 

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

## **Complete if Known**

Application Number	10/690,785
Filing Date	October 21, 2003
First Named Inventor	John Arthur Cooper et al.
Group Art Unit	1724
Examiner Name	N/A
Attorney Docket Number	2896-6

## **U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
		US 3,194,629		Dreibelbis et al.	07/13/1965	
		US 3,447,359		S.F. Kapff	06/03/1969	
		US 3,791,196		Lepper, Jr.	02/12/1974	
		US 3,842,678		De Baun et al.	10/22/1974	
		US 3,849,537		Allgulin et al.	11/19/1974	
		US 3,888,109		Sharki et al.	06/10/1975	
		US 3,892,549		Lyshkow	07/01/1975	
		US 3,956,458		Anderson	05/11/1976	
		US 4,036,253		Fegan et al.	07/19/1977	
		US 4,094,777		Sugier et al.	06/13/1978	
		US 4,402,916		Luetzelschwab	09/06/1983	
		US 4,419,107		Roydhouse	12/06/1983	
		US 4,474,896		Chao	10/02/1984	
		US 4,500,327		Nishino et al.	02/19/1985	
		US 4,566,342		Kurz	01/28/1986	
		US 4,578,256		Nishino et al.	03/25/1986	
		US 4,679,628		Luetzelschwab	07/14/1987	
		US 4,826,775		Burns et al.	05/02/1989	
		US 4,903,492		King	02/27/1990	
		US 4,917,862		Kraw et al.	04/17/1990	

## **FOREIGN PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>6</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
			JP 49-43197	A	Osaka Soda Co., Ltd.	11/19/1974		
			JP 50-6438	A	Osaka Soda Co., Ltd.	03/13/1975		
			GB 2122916	A	Nishino et al.	01/25/1984		
			EP 0289809	A1	Vogg et al.	11/09/1988		

Examiner  
Signature

Date  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

Approved for use through 10/31/2002. OMB 0651-0031

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Complete if Known**

(use as many sheets as necessary)

Sheet	2	of	3
-------	---	----	---

Application Number	10/690,785
Filing Date	October 21, 2003
First Named Inventor	John Arthur Cooper et al.
Art Unit	1754
Examiner Name	N/A
Attorney Docket Number	2896-6

[illegible][illegible]

Date Considered

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 3

### Complete if Known

Application Number	10/690,785
Filing Date	October 21, 2003
First Named Inventor	John Arthur Cooper et al.
Group Art Unit	1724
Examiner Name	N/A
Attorney Docket Number	2896-6

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		J.A. COOPER ET AL., "Modification of TRC's Hazardous Element Sampling Train for Mercury Speciation in Utility Flue Gas," TRC Environmental Corp., Tigard, Oregon, Electric Power Research Institute, Palo Alto, California, pp. 1-16	
		H.GUTBERLET ET AL., "Behaviour of the Trace Element Mercury in Bituminous Coal Furnaces with Flue Gas Cleaning Plants," Media-Data of VGB Kraftwerkstechnik, June 4, 1991	
		BURN HALL ET AL., "Mercury Chemistry in Simulated Flue Gases Related to Waste Incineration Conditions," Environ. Sci. Technol., Vol. 24, No. 1, 1990, pp. 108-111	
		NINA BERGAN FRENCH, ET AL., "State-of-the-Art Mercury CEMs for Hazardous & Mixed Waste Incineration Applications," Environmental Science & Technology and Analytical Chemistry, Feb. 16, 1999, pp. 1-10	
		JOSEPH J. HELBLE, ET AL., "Control of Mercury Emissions from Coal-Fired Power Plants," National Center for Environmental Research, U.S. Environmental Protection Agency, Oct. 31, 2000, <a href="http://es.epa.gov/ncercq-abstracts/grants/99/enveng/helble.html">http://es.epa.gov/ncercq-abstracts/grants/99/enveng/helble.html</a>	
		S.E. LINDBERG, ET AL., "Atmospheric Mercury Speciation: Concentrations and Behavior of Reactive Gaseous Mercury in Ambient Air," Environ. Sci. Technol., Vol. 32, No. 1, 1998, pp. 49-57	
		PATRICIO E. TRUJILLO, ET AL., "Development of a Multistage Air Sampler for Mercury," Analytical Chemistry, Vol. 47, No. 9, August 1975, pp. 1629-1634	
		YOSHIMI MATSUMURA, "Adsorption of Mercury Vapor on the Surface of Activated Carbons Modified by Oxidation or Iodization," Atmospheric Environment, Vol. 8, pp. 1321-1327	
		JOHN A. COOPER, "Recent advances in sampling and analysis of coal-fired power plant emissions for air toxic compounds," Fuel Processing Technology, Vol. 39, 1994, pp. 251-258	
		S.V. KRISHNAN, ET AL., "Sorption of Elemental Mercury by Activated Carbons," Environ. Sci. Technol., 1994, 28, pp. 1506-1512	
		BABU R. NOTT, ET AL., "Evaluation and Comparison of Methods for Mercury Measurement in Utility Stack Gas," Elec. Power Res. Inst, Palo Alto, CA, U.S. Environ. Prot. Agen., Research Triangle Park, NC, Radian Corp., Austin, TX, Deeco, Inc., Cary, NC, Frontier Geosciences, Seattle, WA, Mass. Inst. Of Technol., Cambridge, MA, Chester Environ., Tigard OR, pp. 1-15	

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.